1. (Amended) A method for annealing a lithium niobate ($LiNbO_3$) structure, the method comprising:

heating the lithium niobate structure in a sealed pure oxygen gas (O_2) atmosphere substantially lacking in H_2O;

pressurizing the sealed pure oxygen gas atmosphere to exceed ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

2. (Amended) The method of claim 1 wherein said heating act further comprises:

locating a lithium niobate powder proximate to the lithium niobate structure to retard outgassing of lithium oxide (Li_2O) from the lithium niobate structure.

3. (Amended) The method of claim 2 wherein the locating act further comprises:

separating the lithium niobate powder from the lithium niobate structure with an interface porous to lithium oxide gas outgassed from the lithium niobate powder and the interface substantially without porosity to the lithium niobate powder.

4. (Amended) The method of claim 3 wherein the interface includes a porosity of approximately 20 microns.

6. (Amended) The method of claim 1 wherein said heating is within a temperature range of about 300 degrees Celsius to about 1000 degrees Celsius.

8. (Amended) The method of claim 1 wherein said heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

9. (Amended) A method for annealing a lithium niobate ($LiNbO_3$) structure, the method comprising:

locating a lithium niobate powder proximate to the lithium niobate structure to retard outgassing of lithium oxide (Li_2O) from the lithium niobate structure;

heating the lithium niobate structure and the lithium niobate powder in a sealed oxygen gas (O_2) atmosphere;

pressurizing the sealed oxygen gas atmosphere to a pressure above ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period ; and

cooling to room temperature.

10. (Amended) The method of claim 9 wherein said locating act further comprises:

separating the lithium niobate powder from the lithium niobate structure with an interface porous to lithium oxide gas outgassed from the lithium niobate powder and the interface substantially without porosity to the lithium niobate powder.

11. (Amended) The method of claim 10 wherein the interface includes a porosity of approximately 20 microns.

12. (Amended) The method of claim 9 with a sealed pure oxygen gas atmosphere substantially lacking in H_2O.

22. (Amended) A method for annealing a lithium tantalate ($LiTaO_3$) structure, the method comprising:

heating a lithium tantalate structure in a sealed pure oxygen gas (O_2) atmosphere substantially lacking in H_2O

pressurizing the sealed pure oxygen gas atmosphere to exceed ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

27. (New) The method of claim 22 wherein the heating act further comprises:

locating a lithium tantalate powder proximate to the lithium tantalate structure to retard outgassing of lithium oxide (Li_2O) from the lithium tantalate structure.

28. (New) The method of claim 22 wherein the locating act further comprises:

separating the lithium tantalate powder from the lithium tantalate structure with an interface porous to lithium oxide gas outgassed from the lithium tantalate powder and the interface substantially without porosity to the lithium tantalate powder.

29. (New) The method of claim 22 wherein the interface includes a porosity of approximately 20 microns.

30. (New) The method of claim 22 wherein the heating is within a temperature range of about 300 degrees Celsius to about 1000 degrees Celsius.

31. (New) The method of claim 22 wherein said cooling occurs within a ranges of rates of about 0.5 degrees Celsius per minute to about 40 degrees Celsius per minute.

32. (New) The method of claim 22 wherein the pressurizing is within a pressure range of about 2 psi above ambient atmospheric pressure to about 25 psi above ambient atmospheric pressure.

33. (New) The method of claim 22 wherein the heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

34. (New) The method of Claim 22, wherein the lithium tantalate structure includes at least one of: an optical modulator and an optical waveguide.

35. (New) A method for annealing a lithium tantalate ($LiTaO_3$) structure, the method comprising:

locating a lithium tantalate powder proximate to the lithium tantalate structure to retard outgassing of lithium oxide (Li_2O) from the lithium tantalate structure;

heating the lithium tantalate structure and the lithium tantalate powder in a sealed oxygen gas (O_2) atmosphere;

pressurizing the sealed oxygen gas atmosphere to a pressure above ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period ; and

cooling to room temperature.

36. (New) The method of claim 35 wherein said locating act further comprises:

separating the lithium tantalate powder from the lithium tantalate structure with an interface porous to lithium oxide gas outgassed from the lithium tantalate powder and the interface substantially without porosity to the lithium tantalate powder.

37. (New) The method of claim 36 wherein the interface includes a porosity of approximately 20 microns.

38. (New) The method of claim 35 with a sealed pure oxygen gas atmosphere substantially lacking in H_2O.

39. (New) The method of claim 35 wherein said heating is within a temperature range of about 300 degrees Celsius to about 1000 degrees Celsius.

40. (New) The method of claim 35 wherein said heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

41. (New) The method of claim 35 wherein said pressurizing is within a pressure range of about 2 psi above ambient atmospheric pressure to about 25 psi above ambient atmospheric pressure.

42. The method of claim 35 wherein said cooling occurs within a range of rates of about 0.5 degrees Celsius per minute to about 40 degrees Celsius per minute.

43. (New) The method of Claim 35, wherein the lithium tantalate structure includes at least one of: an optical modulator and an optical waveguide.

44. (New) The method of Claim 1, wherein the lithium niobate structure includes at least one of: an optical modulator and an optical waveguide.

45. (New) The method of claim 9 wherein said heating is within a temperature range of about 300 degrees Celsius to about 1000 degrees Celsius.

46. (New) The method of claim 9 wherein said heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

47. (New) The method of claim 9 wherein said pressurizing is within a pressure range of about 2 psi above ambient atmospheric pressure to about 25 psi above ambient atmospheric pressure.

48. (New) The method of Claim 9, wherein the lithium niobate structure includes at least one of: an optical modulator and an optical waveguide.